REMARKS

Reconsideration is respectfully requested for the following reasons.

Claims 1, 2, 11-12, 26, 28, 30, 31, 33, 35-41, 46-55, 58-67, 69-70, 72-82 are pending. Paragraph 3 of the Action lists claims 68 and 71 in the list of pending claims, but review of the Amendment filed July 16, 2008 shows they are cancelled.

The undersigned respectfully requests the opportunity to conduct an Examiner Interview.

In paragraph 5, Claims 1, 2, 11-12, 26, 28, 30, 31, 33, 35-41, 46-55, 58 and 61-82* stand rejected under 35 USC 103(a) as obvious over Gutweiler (US 5,573,842) in view of Dauvergne (FR 2,401,941 Abstract), and Shohi (EP 1036775), further in view of Degeilh (US 4,696,971) and then in view of Masao (JP08-337446). In paragraph 6, Claims 59-60 stand rejected under 35 USC 103(a) as obvious over Gutweiler (US 5,573,842) in view of Dauvergne (FR 2,401,941 Abstract), in view of Shohi (EP 1036775), in view of Degeilh (US 4,696,971), and further in view of Keppler (US 4,433,108) and then in view of Masao (JP08-337446).

Claims 1, 69, 77 and 80 are typical of the claims.

Claim 1 is directed to a process for preparing a low color, polyvinyl butyral (PVB) sheet for use in the manufacture of glass laminates. The process comprises a number of steps. The first step (I) is admixing polyvinyl alcohol, butyraldehyde, an acid or mixture of acids, water, and *sodium dialkyl sulfosuccinate*, such as *dioctyl sulfosuccinate ("DOS" or "DOSS")*. The second step (II) is stabilizing the mixture obtained in step (I) by (a) *raising the pH of the mixture to at least pH 10*, (b) isolating the PVB resin composition by draining the liquid, and (c) washing the PVB resin composition with neutral pH water. The third step (III) is plasticizing the PVB resin composition with from about 30 to about 50 pph of plasticizer selected from the group consisting of triethylene glycol di(2-ethylhexanoate), tetraethylene glycol diheptanoate, dibutyl sebacate, and mixtures thereof, based on the dry weight of the resin. The fourth step (IV) is mixing (a) a PVB bleaching compound selected from the group consisting of organic bisulfites, inorganic bisulfites and sulfosuccinates, and, optionally, (b) an antioxidant and a UV light stabilizer with the polyvinyl butyral resin composition. The fifth step (V) is extruding the PVB resin composition at a temperature of from about 175°C to about 225°C to obtain a PVB sheet having a glass transition temperature (T_g) of greater than about 32°C and a YID of less than about 12.

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* As noted above, claims 68 and 71 were previously cancelled.

Claim 69 is directed to the process of claim 1 further comprising laminating the PVB sheet to glass.

Claim 77 is directed to the process of claim 1 further comprising forming a windshield by laminating the polyvinyl butyral sheet to glass.

Claim 80 is directed to the process of claim 1 further comprising forming a glass laminate for use in a home or other building.

Rather than summarizing the entire Action, this document will focus on the remaining issues pointed out in the Examiner's "Response to Arguments" in the Action. The comments focus on two issues: (1) the nature of the information in the Declaration; and (2) the Examiner's comments concerning the nature of the teachings concerning pH in Degeilh.

Applicants traverse the rejection for the reason that Degeilh leads away from the claimed invention by teaching away from use of a DOSS and carrying out step (II) of the independent claims by "raising the pH of the mixture to at least pH 10", and since none of the cited documents would lead the person of ordinary skill in the art to modify the process of Degeilh to arrive at the claimed invention. In addition, applicants submit that the claimed invention provides an unexpected result. These arguments were presented in detail in prior responses, so here applicants will focus on the two major topics presented in the Response to Arguments.

(1) EXAMINER'S COMMENTS CONCERNING pH IN DEGEILH.

In the second full paragraph on page 10 of the Action under the heading "Response to Arguments", the Action states:

> "Regarding applicants' argument that Degeilh teaches away from the instantly claimed invention because Degeilh teaches a process involving a step of neutralizing to a pH of no more than 5. However, the examiner disagrees because applicants must recognize that Degeilh only teaches away of pH of no more than 5 when the product is used in applications where the ability to adhere to glass is critical. Further, applicants must recognize that Degeilh (col. 1, line 68 to col. 2, line 2) clearly discloses typically, this after-treatment is carried out in an aqueous medium under basic conditions, namely, at a pH between 9 and 11, which fully embracing the pH of at least 10 as claimed."

In addition, at page 13, in the third full paragraph under the heading ""Response to Arguments", the Action states:

> "Further, applicants must recognize that Degeilh (col. 1, line 68 to col. 2, line 2) clearly discloses typically, this after-treatment is carried out in an

aqueous medium under basic conditions, namely, at a pH between 9 and 11, which fully embracing the pH of at least 10 as claimed."

There are three issues that applicants present for consideration: (A) the Action asserts that Degeilh teaches use of a pH of 9-11, (B) the Action asserts that the arguments are inappropriate because Degeilh teaches use of a pH of no more than 5 when PVB adhesion is an issue, and (C) the Action has improperly ignored all of applicants claims that encompass PVB adhered to glass.

(A) THE PORTIONS OF DEGEILH THAT MENTION Ph 9-11 ARE REFERRING TO PROCESSES USING OTHER EMULSIFIERS .

The rejection is incorrectly pointing to Degeilh column 1, lines 68 to column 2, line 2, in support of teaching use of a pH between 9 and 11 when DOSS is used. Degeilh expressly teaches away from using high pH with DOSS emulsifier. Degeilh teaches a process involving a step of neutralizing to a pH of no more than 5 when DOSS is used as the emulsifier. (See, e.g., column 2, lines 15-23.) The portion of Degeilh referred to in the Action (column 1, lines 68 to column 2, line 2) is discussing a prior process described in Dauvergne (FR 2,401,941) that Degeilh considers to be inadequate (see, column 2, lines 16-18), and that prior process uses other emulsifiers (see, column 1, line.57-column 2, line 12). Degeilh is focused on improving the Dauvergne (see, column 2, lines 16-18), and the claimed invention is an improvement over both processes. Degeilh states that when DOS is used the neutralization must be discontinued when a pH of approximately 5 is reached (See, e.g., column 2, lines 15-23.), whereas the previous process uses different emulsifiers at a higher pH. Thus, Degeilh teaches away from the process steps of the claimed invention.

(B) ADHESION TO GLASS IS NOT THE ISSUE - THE TEACHINGS OF DEGEILH ARE APPLICABLE TO ANY PROCESS WHERE DOSS EMULSIFIER IS REMOVED.

The Action asserts that Degeilh only teaches away from using a pH of more than 5 when the product is used in applications where the ability to adhere to glass is critical. The Action seems to be taking the position that the only way a patent can be granted is if the claims are someone limited to the situation where adhesiveness or adhesion to glass is recited in the claims. This position of the Action is technically incorrect and is based upon an improper reading of Degeilh. Degeilh actually teaches that ***removal of the emulsifier*** is critical to applications where the ability to adhere to glass is critical, and both Degeilh and the claimed invention involve removal of DOSS emulsifier. Thus, for applicants arguments to be correct the claims have to recite removal of DOSS and they recite this feature.

Degeilh is teaching that removal of the emulsifier is critical to applications where the ability to adhere to glass is critical, and both Degeilh and the claimed invention involve removal of DOSS emulsifier. Since both processes are of the type where emulsifier is removed and in both cases the emulsifier is DOSS, the teachings of Degeilh are applicable to any process where DOSS emulsifier is removed, and thus the person of ordinary skill in the art would read them as being applicable to the claimed invention.

Since Degeilh is teaching that if you use DOSS instead of previously used emulsifiers, such as sodium alkylsulfonate, and states that neutralization should be discontinued as soon as a pH of approximately 5 is reached, then Degeilh's teachings are applicable to any process that involves removal of DOSS emulsifier. Therefore, Degeilh is teaching away from the claimed invention.

Looking at this closely, it appears that the Action is relying upon the following portions at column 1, line 57-column 2, line 40 of Degeilh:

> "However, the drawbacks of these processes can be seen when the emulsifier used is a sodium alkylsulfonate or sodium alkylaryl-sulfonate, such as *sodium dodecylbenzene-sulfonate or sodium aryl-sulfonate*. These emulsifiers are necessary to prevent an agglomeration of polyvinyl butyral particles which would greatly diminish the optical quality of the polymer product. ***Unfortunately, if these emulsifiers are left in the polyvinyl butyral product, they also reduce the product's ability to adhere to glass. As a result, these emulsifiers must be removed in the after-treatment of the polyvinyl butyral product.*** Typically, this after-treatment is carried out in an aqueous medium under basic conditions, namely, at a pH between 9 and 11. Most frequently, soda is used in this after-treatment to neutralize the acid of the catalyst to the desired pH level. Unfortunately, soda or other substitute chemicals required for the neutralization process significantly increase the cost of the after-treatment treatment process of polyvinyl butyral. In addition, this process prolongs the already lengthy after-treatment process of polyvinyl butyral. Moreover, during after-treatment, the butyraldehyde is condensed to form a number of precipitates, including ethyl-2-hexenal, which has a very unpleasant odor."
>
> SUMMARY OF THE INVENTION
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> "The present invention relates to a process for the preparation of polyvinyl butyral having improved properties and comprises the process disclosed in French Pat. No. 2,401,941 with the additional conditions that (i) ***sodium dioctyl sulfosuccinate (DOS) is used as an emulsifier*** *instead of sodium alkylsulfonate or sodium alkylaryl-sulfonate*, and (ii) the "neutralization process" is ***discontinued as soon as a pH of approximately 5 is reached***.
>
> "Advantageously, in the present invention, the emulsifier DOS is completely and inexpensively removed from the polymer by a thorough washing with water at ambient temperature. As a result, a product is inexpensively obtained which has superior adhesiveness to glass materials. In addition, unlike conventional washing processes, the washing process of the invention does not produce ethyl-2-hexenal, which has a very unpleasant odor.

> "In comparison to conventional emulsifiers, smaller quantities of DOS are required to produce identical quantities of polyvinyl butyral. Moreover, the use of DOS effective as an emulsifier substantially decreases the "curing time" of the polyvinyl butyral after neutralization to a range of 5 to 10 minutes. The period of curing using conventional polyvinyl butyral is generally one hour."

[Emphasis added.]

Degeilh teaches using DOSS as an emulsifier instead of the previously used emulsifiers such as sodium alkylsulfonate. These portions of the specification are stating that the emulsifier, whether it is the previously used ones or DOSS, must be removed for applications where adhesion to glass is important. The claimed invention is directed to a process where DOSS is used as an emulsifier and like the process of Degeilh the DOSS is removed during the process.

Since the claimed invention and Degeilh are both processes where emulsifier is removed and in both cases the emulsifier is DOSS, the teachings of Degeilh are applicable to any process where DOSS emulsifier is removed and thus the person of ordinary skill in the art would read them as being applicable to the claimed invention. Since Degeilh is teaching that if you use DOSS instead of previously used emulsifiers, such as sodium alkylsulfonate, and states that neutralization should be discontinued as soon as a pH of approximately 5 is reached, then Degeilh's teachings are applicable to any process that involves removal of DOSS emulsifier. Therefore, Degeilh is teaching away from the claimed invention.

(C) <u>THE ACTION HAS IMPROPERLY IGNORED ALL OF APPLICANTS CLAIMS THAT INVOLVE ADHESION OF PVB TO GLASS</u>.

If for some reason the Examiner is not persuaded that the position concerning adhesion to glass is technically incorrect, the Examiner must still consider the claims focused on carrying out the process through making glass laminates, windshields and buildings, respectively, such as claims 69, 77 and 80. Those claims involve adhering PVB to glass and applicants have pointed this out in prior responses. Therefore, applicants respectfully request that any future Action specifically address these claims.

(2) <u>THE DECLARATION</u>.

The Action criticizes the Declaration for not providing adequate information. The Action states that the comparative data must include the compositions and processing steps. That is, in the second full paragraph on page 10 of the Action under the heading "Response to Arguments", the Action states:

> "Applicants argue that the declaration filed July 16 has adequately shown the criticality of the claimed "dialkyl sulfosuccinates" and "neutralizing to pH of no more than 5" in the reduced amount of defects. However, the examiner

> disagrees because the criticality of an invention must be demonstrated through comparative data which includes the compositions and processing steps to show the criticality of the claimed invention, not just by [hearsay]."

In addition, at page 13, in the second full paragraph under the heading ""Response to Arguments", the Action states:

> "Applicants argue that the affidavits filed January 27, 2009 has adequately shown the criticality of the claimed "dialkyl sulfosuccinates" and "raising the pH to at least 10" to reduce the amount of defects in the film samples. However, the examiner disagrees because the criticality of an invention must be demonstrated through comparative data which includes the complete compositions and processing steps disclosure to show the criticality of the claimed invention, not just by [hearsay]. The [affidavits] filed in January 27, 2009 fail to indicate the amount of each components employed by the example and the comparative example. Therefore, the examiner has a reasonable basis to believe that the comparative data presented are not commensurate to the scope of the invention being claimed and the invention disclosed in the prior art."

[Emphasis in original.]

Applicants herein respond to each of the points the Examiner makes.

First, applicants take strong issue with the characterization of the Declaration as being directed to "hearsay." By calling it "hearsay", the Patent Office is saying that the Declaration is directed information be received from someone other than the Declarant. The Declaration specifically states: "All of the work described herein was carried out by me or under my supervision." Therefore, it is very clear that the Declaration is not based upon "hearsay."

Second, the Action states that complete compositions and processing steps were not presented. Applicants are submitting herewith a new Declaration with some additional information. Applicant submits that the Declaration contains adequate information and meets the Patent Office standards. Applicants note that the Declaration contains a detailed explanation of the steps used in preparing samples and the measurements made on the samples.

Third, applicants submit that the Patent Office's present standards for considering Declarations should be applied and unless the Patent Office raises specific technical points concerning the inadequacy of the Declaration, it should accept that based upon the Declarant's extensive experience in the glass laminate art that the evidence is accurate.

Concerning this point, applicants submit that the Declarant has extensive experience in the pertinent art and therefore the Declaration should be given credence. In fact, MPEP 716.01(c) III. states:

> "In assessing the probative value of an expert opinion, the examiner must consider the nature of the matter sought to be established, the strength of any opposing evidence, the interest of the expert in the outcome of the case, and the presence or absence of factual support for the expert's opinion. [Citations omitted.]"

Given the above, applicants respectfully request that the Examiner review the Declaration and given the extensive experience of the Declarant and the fact that his views are based upon work actually carried out and described in the Declaration submit that the Declaration should be given great credence.

SUMMARY

In summary, in the claimed invention a mixture of polyvinyl alcohol, butyraldehyde, an acid or mixture of acids, water, and sodium dialkyl sulfosuccinate (e.g., DOSS) obtained in step (I) is stabilized by (a) raising the pH of the mixture to at least pH 10, (b) isolating the PVB resin composition by draining the liquid, and (c) washing the PVB resin composition with neutral pH water. Applicants submit that the Degeilh leads away from the claimed invention by teaching away from a process comprising the two key steps of:

- use of sodium dialkyl sulfosuccinate (e.g., DOSS); in combination with
- the stabilizing step (II) involving (a) raising the pH of the mixture to at least pH 10, (b) isolating the polyvinyl butyral resin composition by draining the liquid, and (c) washing the polyvinyl butyral resin composition with neutral pH water,

and since none of the cited documents would lead the person of ordinary skill in the art to modify the process of Degeilh to arrive at the claimed invention. In addition, applicants submit that the invention provides results that would not be expected based on the cited documents. For these reasons, applicants respectfully request that the rejections under 35 USC 103 be withdrawn.

In view of the foregoing, allowance of the above-referenced application is respectfully requested. Should any matters remain, the Examiner is invited to telephone the undersigned at the below-listed direct dial telephone number in order to expedite prosecution.

Respectfully submitted,

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